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| 10/535,234 | 06/14/2005 | Takeshi Chonan | 123910 | 5655 |
| 25944 7590 03/09/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850 | | | | |
| EXAMINER | | | | |
| JACKSON, MONIQUE R | | | | |
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| 1794 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/535,234

Applicant(s)

CHONAN ET AL.

Examiner

Monique R. Jackson

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 12/22/08 has been entered. Claims 1-16 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 1, 3-9, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al (JP 2000-233929.) Inoue et al teach IR ray shielding material comprising superfine particle powder of $V_{(1-x)}O_2M_x$ wherein M is tungsten (W) and/or molybdenum (Mo); and the superfine powder has a particle size of 10 to 500nm (Abstract.) Inoue et al teach that the preferred process of producing the composite is by heat synthesis of a mixture of vanadium oxide (VO_2) powder and tungsten oxide (WO_3) powder in a high frequency thermal plasma such that the resulting complex oxide has a composition of $V_{(1-x)}O_2M_x$, where x is preferably 0.7-2.7 (Abstract; Claims 2-3; wherein at $x=0.7$ the composite oxide taught by Inoue et al would read upon the claimed composite oxide of $MxWyOz$ wherein $z=2$, $x=0.3$, $y=0.7$; hence $x/y=0.429$ and $z/y=2.857$ which are both within the claimed ranges.) Inoue et al also teach that the complex oxide particles can be dispersed or kneaded into an acrylic, vinyl or polyester resin, and formed into a sheet or film, which may also be placed between two sheets of glass, or may be coated on a substrate such as a glass, polymer or ceramic material (Entire document, particularly Paragraphs 0015, 0038, 0042, Examples.) Inoue et al further teach that the vanadium/tungsten composite oxide particles provide infrared radiation shielding properties and are suitable in producing windows of automobiles or residences (Paragraph 0001.) With regards to Claims 4-5, the Examiner takes the position that the vanadium/tungsten composite oxides taught by Inoue et al would inherently

possess the claimed color and structure properties. With regards to Claims 6 and 7, the Examiner notes that the claim fails to distinguish between the “composite tungsten oxide fine particles” and the “fine particles of oxides, said fine particles of oxides comprise two or more elements selected from the group” which includes W, as well as the “fine particles of composite oxides”. Hence, the Examiner takes the position that the vanadium/tungsten composite oxides taught by Inoue et al read upon all three types of these fine particles and hence meet any mixing ratio thereof. With regards to Claim 8, the Examiner notes that plastic is an alternative sheet material in Claim 1 and since it has not been positively recited in Claim 8 that the sheet material is in fact plastic, the limitations of Claim 8 remain an alternative option and are met by the invention of Inoue et al.

Claim Rejections - 35 USC § 103

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (USPN 5,830,568) in view of Inoue et al (JP 2000-233929.) Kondo teaches a laminated glass and a method of producing the same, wherein the laminated glass comprises first and second transparent glass plates and interposed therebetween an interlayer film comprising functional ultra-fine particles dispersed therein (Abstract.) Kondo teaches that the functional ultra-fine particles have a particle diameter of up to 0.2 μm and due to their incorporation in the interlayer, the interlayer film is provided with various additional functions such as heat insulation, ultraviolet ray absorption and the maintenance of a sufficient radio transmittance (Abstract.) Kondo teaches that the functional ultra-fine particles comprise at least one member selected from the group consisting of: metals selected from the group consisting of Sn, Ti, Si, Zn, Zr, Fe, Al, Cr, Co, Ce, In, Ni, Ag, Cu, Pt, Mn, Ta, W, V and Mo, and compounds containing said metals such as oxides thereof as well as doped compounds thereof; and are dispersed in the interlayer

film preferably formed from polyvinyl butryal or ethylene-vinyl acetate (Col. 3-4.) Kondo also teach that the particles may be a mixture of the disclosed particle materials and that the interlayer film may be laminate of multiple layers such as a layer of the above film laminated to a conventional interlayer film or sandwiched between two conventional interlayer films (*hence reads upon the layered structures of Claims 2, 10-14*; Col. 4, lines 4-30.) Though Kondo teaches that the ultra-fine particles may be composite oxides of various metals including tungsten, Kondo does not specifically teach the claimed tungsten composite oxides. However, Inoue et al teach IR ray shielding material comprising superfine particle powder of $V_{(1-x)}O_2M_x$ wherein M is tungsten (W) and/or molybdenum (Mo); and the superfine powder has a particle size of 10 to 500nm (Abstract.) Inoue et al teach that the preferred process of producing the composite is by heat synthesis of a mixture of vanadium oxide (VO_2) powder and tungsten oxide (WO_3) powder in a high frequency thermal plasma such that the resulting complex oxide has a composition of $V_{(1-x)}O_2M_x$, where x is preferably 0.7-2.7 (Abstract; Claims 2-3; wherein at $x=0.7$ the composite oxide taught by Inoue et al would read upon the claimed composite oxide of $M_xW_yO_z$ wherein $z=2$, $x=0.3$, $y=0.7$; hence $x/y=0.429$ and $z/y=2.857$ which are both within the claimed ranges.) Inoue et al also teach that the complex oxide particles can be dispersed or kneaded into an acrylic, vinyl or polyester resin, and formed into a sheet or film, which may also be placed between two sheets of glass, or may be coated on a substrate such as a glass, polymer or ceramic material (Entire document, particularly Paragraphs 0015, 0038, 0042, Examples.) Inoue et al further teach that the vanadium/tungsten composite oxide particles provide infrared radiation shielding properties and are suitable in producing laminated glass or windows of automobiles or residences (Paragraph 0001.)

4. Hence, though Kondo does not specifically teach the claimed tungsten composite oxides, Kondo clearly discloses oxides of tungsten and vanadium as well as composite oxides thereof, and given the reasonable expectation of success, one having ordinary skill in the art at the time of the invention would have been motivated to utilize any tungsten composite oxide doped with the metals disclosed by Kondo, based upon the desired functional properties for a particular end use, and more particularly, the vanadium/tungsten composite oxides taught by Inoue et al which read upon the claimed composite formula and provide suitable shielding properties for similar applications including laminated glass and automobile windows, or mixtures of these composite oxides with any of the other oxides disclosed by Kondo.

Response to Arguments

5. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1794
March 3, 2009